CLAIMS

What is claimed is:

1. A positioning system, comprising:

a command signal generator structured to transmit a command signal;

a subject module structured to receive the command signal and emit a subject signal responsive thereto;

a plurality of sensor modules arrayed in a defined three-dimensional space and structured to detect the subject signal;

a plurality of counters corresponding to the plurality of sensors, each of said counters configured to count an increment relating to reception of the subject signal by the corresponding sensor module;

a comparator configured to compare the plurality of increments and generate a plurality of counter differential values; and

a correlator configured to correlate the plurality of counter differential values to determine a subject location in the defined space.

2. The system of claim 1, further comprising:

a calibration module disposed in a predetermined location in the defined three-dimensional space relative to the plurality of sensor modules and structured to transmit a calibration signal.

3. The system of claim 1 wherein the counter has an increment of about 10^{-7} seconds.

4. The system of claim 1 wherein the counter has an increment of about 10^{-8} seconds.

5. The system of claim 1 wherein the counter has an increment of about 10^{-9} seconds.

6. The system of claim 1, further comprising:

a plurality of subject modules, each of said subject modules having a unique transmission identity.

7. The system of claim 1 wherein the subject module further includes a memory.

8. The system of claim 1 wherein the correlator is configured to determine a subject location in the defined space in real time.

9. A method for locating a subject, comprising:

transmitting a signal to a subject unit located within a defined three-dimensional space;

transmitting a signal to slave units located within the defined three-dimensional space, each slave unit configured to start a 1 GHz counter from a counter start value;

transmitting a subject signal from the subject unit located within a defined three-dimensional space;

stopping said counters of said slave units to define counter stop values;

determining net counter values for each slave unit;

comparing the net counter values to determine counter difference values; and

correlating said counter difference values to determine a subject unit location in the three-dimensional space.

10. The method of claim 9 wherein correlating comprises correlating said counter difference values to determine a subject unit location in three dimensions.

11. The method of claim 9 wherein correlating comprises correlating said counter difference values to determine a subject unit location to within three feet.

12. The method of claim 9 wherein correlating comprises correlating said counter difference values to determine a subject unit location to within one foot.

13. The method of claim 9 wherein correlating comprises said correlating counter difference values to determine a subject unit location in the three-dimensional space in real time.

14. The method of claim 9, further comprising:

receiving data from said subject unit.

15. The method of claim 9, further comprising:

transmitting a calibration signal to the slave units from a calibration unit located at a preselected position within the defined three-dimensional space;

stopping said counters of said slave units to define calibration counter stop values;

determining net calibration counter values for each slave unit;

comparing the net calibration counter values to determine calibration difference values;

correlating said counter difference values to determine the calibration unit location in the three-dimensional space; and

comparing the determined calibration unit location to a reference value for the preselected position of the calibration unit.